

INITIAL CAPABILITY EVALUATION SCENARIOS

Version 1.5

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Department of Homeland Security
Transportation Security Administration
Transportation Threat Assessment and Credentialing Office
601 S. 12th Street
Arlington, VA 22202

PURPOSE:

The Initial Capability Evaluation (ICE) is a collection of scenarios involving Transportation Worker Identity Credential (TWIC) Reader hardware and TSA issued TWIC cards.

The purpose of ICE is to evaluate if a given TWIC Reader has implemented an identified set of functionality specified in the TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 allowing said TWIC Reader to operate in a variety of expected normal situations as well as a few anticipated exception cases.

CHUID ONLY VERIFICATION

Purpose	This positive scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID using the contactless interface and perform a verification of the CHUID within a specified time period.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 4.2.1.2, 4.2.1.3 and Appendix A Section A.1
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 A live TWIC card enrolled in TWIC for Person Alpha. A live TWIC card enrolled in TWIC for Person Beta. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. Person Alpha and Person Beta registered in the PACS The TWIC Reader / PACS configured for CHUID Only Verification mode.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read and verified within 2 seconds by observing the PACS granted access as a result of this card presentation. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read and verified within 2 seconds by observing the PACS granted access as a result of this card presentation. Present Person Gamma TWIC card to the contactless interface of the UUE. Check that this card presentation was rejected by the PACS (i.e. unknown user) and no access privileges were granted.
Expected Results	The Person Alpha CHUID and Person Beta CHUID shall be verified within 2 seconds and approved for access. Person Gamma may be verified within 2 seconds but not approved for access. [Gamma not registered with the PACS].

CHUID WITH BIOMETRICS VERIFICATION

Purpose	This positive scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and enciphered biometrics using the contactless interface, obtain and use the TPK, perform a 1:1 biometrics match and validate this information within a specified period of time.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 4.2.1.2, 4.2.1.3, 4.2.2 and Appendix A Section A.3
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 A live TWIC card enrolled in TWIC for Person Alpha. A live TWIC card enrolled in TWIC for Person Beta. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. Person Alpha and Person Beta registered in the PACS which may include capturing the TPK. The TWIC Reader / PACS configured for CHUID with Biometrics Verification mode.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified, the TPK obtained and a successful 1:1 biometrics match was achieved all within a maximum of 30 seconds by observing the PACS granted access as a result of this card presentation. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified, the TPK obtained and a successful 1:1 biometrics match was achieved all within a maximum of 30 seconds by observing the PACS granted access as a result of this card presentation. Present Person Gamma TWIC card to the contactless interface of the UUE. Check that this card presentation was rejected by the PACS (i.e. unknown user) and no access privileges were granted.
Expected Results	Person Alpha and Person Beta shall be verified within 30 seconds and approved for access. Person Gamma may be verified within 30 seconds but not approved for access. [Gamma not registered with the PACS]

CHUID EXPIRATION

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 A live TWIC card enrolled in TWIC for Person Alpha. A live TWIC card enrolled in TWIC for Person Beta. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. Person Alpha and Person Beta registered in the PACS The TWIC Reader / PACS configured for CHUID Only Verification mode. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

CHUID WITH BIOMETRICS VERIFICATION USING WRONG CARDHOLDER

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 A live TWIC card enrolled in TWIC for Person Alpha. A live TWIC card enrolled in TWIC for Person Beta. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. Person Alpha and Person Beta registered in the PACS The TWIC Reader / PACS configured for CHUID Only Verification mode. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

TWO TWIC CARDS PRESENTED TO THE READER AT THE SAME TIME

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 13. A live TWIC card enrolled in TWIC for Person Alpha. 14. A live TWIC card enrolled in TWIC for Person Beta. 15. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. 16. Person Alpha and Person Beta registered in the PACS 17. The TWIC Reader / PACS configured for CHUID Only Verification mode. 18. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

TWIC APPEARING ON THE HOTLIST

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	19. A live TWIC card enrolled in TWIC for Person Alpha. 20. A live TWIC card enrolled in TWIC for Person Beta. 21. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. 22. Person Alpha and Person Beta registered in the PACS 23. The TWIC Reader / PACS configured for CHUID Only Verification mode. 24. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 10. Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 11. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 12. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

CHUID WITH BIOMETRICS USING AN INCORRECT TWIC PRIVACY KEY

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 25. A live TWIC card enrolled in TWIC for Person Alpha. 26. A live TWIC card enrolled in TWIC for Person Beta. 27. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. 28. Person Alpha and Person Beta registered in the PACS 29. The TWIC Reader / PACS configured for CHUID Only Verification mode. 30. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 13. Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 14. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 15. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

CHUID WITH BIOMETRICS USING NETWORK RETRIEVAL OF THE TWIC PRIVACY KEY

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 31. A live TWIC card enrolled in TWIC for Person Alpha. 32. A live TWIC card enrolled in TWIC for Person Beta. 33. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. 34. Person Alpha and Person Beta registered in the PACS 35. The TWIC Reader / PACS configured for CHUID Only Verification mode. 36. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 16. Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 17. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 18. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

CHUID WITH CARD AUTHENTICATION

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	37. A live TWIC card enrolled in TWIC for Person Alpha. 38. A live TWIC card enrolled in TWIC for Person Beta. 39. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. 40. Person Alpha and Person Beta registered in the PACS 41. The TWIC Reader / PACS configured for CHUID Only Verification mode. 42. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 19. Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 20. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 21. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

CHUID WITH BIOMETRICS TIMEOUT

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 43. A live TWIC card enrolled in TWIC for Person Alpha. 44. A live TWIC card enrolled in TWIC for Person Beta. 45. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. 46. Person Alpha and Person Beta registered in the PACS 47. The TWIC Reader / PACS configured for CHUID Only Verification mode. 48. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 22. Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 23. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 24. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

CHUID WITH BIOMETRICS RETRY LIMIT REACHED

Purpose	This negative scenario shall demonstrate the Unit Under Evaluation (UUE) can read the signed CHUID and determine the credential has expired.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Sections 6.0 and 7.0
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 49. A live TWIC card enrolled in TWIC for Person Alpha. 50. A live TWIC card enrolled in TWIC for Person Beta. 51. A TWIC card enrolled in either TWIC or the Test TWIC system for Person Gamma. 52. Person Alpha and Person Beta registered in the PACS 53. The TWIC Reader / PACS configured for CHUID Only Verification mode. 54. The TWIC Reader / PACS System time set to April 22, 2015.
Procedure	 25. Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 26. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified within 2 seconds but access is not granted due to expiration of the credential. 27. Reset the Reader / PACS System time to the current time prior to starting another scenario.
Expected Results	Person Alpha CHUID and Person Beta CHUID shall not be verified due to an expired credential detected at either the TWIC reader or at the PACS.

CHANGE TO AUTHENTICATION MODE BASED ON MARSEC LEVEL

Purpose	This positive scenario shall demonstrate the Unit Under Evaluation (UUE) can modify the mode of authentication to support MARSEC level conditions.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Section 4
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 A live TWIC card enrolled in TWIC for Person Alpha. A live TWIC card enrolled in TWIC for Person Beta. Person Alpha and Person Beta registered in the PACS which may include capturing the TPK. The TWIC Reader / PACS initially configured for CHUID Verification mode.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read and verified within 2 seconds by observing the PACS granted access as a result of this card presentation. Change the configuration of the TWIC Reader / PACS to CHUID + Biometrics Verification mode. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified, the TPK obtained and a successful 1:1 biometrics match was achieved all within a maximum of 30 seconds by observing the PACS granted access as a result of this card presentation.
Expected Results	The Person Alpha CHUID shall be verified within 2 seconds and approved for access. Person Beta shall be verified within 30 seconds and approved for access

CHUID, CARD AUTHENTICATION AND BIOMETRIC AUTHENTICATION

Purpose	This positive scenario shall demonstrate the Unit Under Evaluation (UUE) can modify the mode of authentication to support MARSEC level conditions.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Section 4
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 A live TWIC card enrolled in TWIC for Person Alpha. A live TWIC card enrolled in TWIC for Person Beta. Person Alpha and Person Beta registered in the PACS which may include capturing the TPK. The TWIC Reader / PACS initially configured for CHUID Verification mode.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read and verified within 2 seconds by observing the PACS granted access as a result of this card presentation. Change the configuration of the TWIC Reader / PACS to CHUID + Biometrics Verification mode. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified, the TPK obtained and a successful 1:1 biometrics match was achieved all within a maximum of 30 seconds by observing the PACS granted access as a result of this card presentation.
Expected Results	The Person Alpha CHUID shall be verified within 2 seconds and approved for access. Person Beta shall be verified within 30 seconds and approved for access

MINIMUM OF ONE SECOND OF TIME BETWEEN CARD PRESENTATIONS

Purpose	This positive scenario shall demonstrate the Unit Under Evaluation (UUE) can modify the mode of authentication to support MARSEC level conditions.
Reference(s)	TWIC Reader Hardware and Card Application Specification Version 1.1, Amendment 1 Section 4
Apparatus	Unless otherwise specified, the scenario environment shall be provided by the candidate TWIC reader vendor inclusive of a PACS implementation (or PC laptop emulation) with connectivity to said TWIC reader. This procedure shall exercise the referenced scenario environment with a particular combination of PACS registered TWIC cards.
Pre-conditions	 9. A live TWIC card enrolled in TWIC for Person Alpha. 10. A live TWIC card enrolled in TWIC for Person Beta. 11. Person Alpha and Person Beta registered in the PACS which may include capturing the TPK. 12. The TWIC Reader / PACS initially configured for CHUID Verification mode.
Procedure	 Present Person Alpha TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read and verified within 2 seconds by observing the PACS granted access as a result of this card presentation. Change the configuration of the TWIC Reader / PACS to CHUID + Biometrics Verification mode. Present Person Beta TWIC card to the contactless interface of the UUE. Check that the CHUID was successfully read, CHUID verified, the TPK obtained and a successful 1:1 biometrics match was achieved all within a maximum of 30 seconds by observing the PACS granted access as a result of this card presentation.
Expected Results	The Person Alpha CHUID shall be verified within 2 seconds and approved for access. Person Beta shall be verified within 30 seconds and approved for access